

BOILER INSURANCE HARD TO GET WITHOUT PROPER INSPECTION LAW

The importance of substantial repairs in sugar manufacturing machinery being carried on carefully and the need of repair in many of the plantations' mills at present to assure steady and continuous operations next season is emphasized in the report of the committee on manufacturing machinery of the Hawaiian Sugar Planters' association. The report is submitted by the following committee which has investigated the subject thoroughly: J. N. S. Williams, chairman, W. A. Ramsay, E. Kouke, W. G. Hall, R. R. Hind and A. Gartley.

The report deals with the following types of machinery: Mills, carrier and conveying apparatus, boilers and steam generating plants, Clarifiers, settling tanks and filters, including molasses clarification, Evaporating apparatus and vacuum pans, Crystalizers and centrifugals, apparatus dealing with low grade sugars, each plantation contributing a letter on its experience with the various items.

Boiler Insurance

On the subject of boiler insurance the letter of B. Von Damm is quoted to the effect that the boiler insurance situation in these islands was such that the limited number of boilers here could yield only sufficient insurance business for one company and that the Hartford Steam Boiler and Inspection and Insurance company was not willing to enter the field unless the planters could guarantee it sufficient business.

The letter also declares that when the matter of boiler insurance was placed by the San Francisco agent of the insurance company could not see its way clear to enter the territory. On this the committee reports:

"We are convinced that the reason for this decision was the uncertainty as to local conditions and the possibly small volume of business obtainable in the absence of a territorial law making boiler inspection compulsory, as is the case in California and a great many other states.

"In order to secure for the owners of boilers in this territory a definite estimate of what the Hartford could do, we respectfully suggest that the sugar planters enter into an agreement with this company to send down to these islands one of their experts, qualified to make an initial inspection of every boiler owned by them, and to make a report on local conditions and of the approximate premium rate the company would have to levy in this territory; the planters to pay for such initial inspection.

"Both the company and the sugar planters would thereby be placed in position to approach the subject matter intelligently and a resulting arrangement would, without question be mutually much more satisfactory.

The expenses of an initial inspection may run as follows:

Salary of inspector for four months	\$1,000
Traveling expenses from San Francisco to Honolulu and return	300
Traveling expenses between the islands and on the islands at \$10 per day	1,200
Total	\$2,500

"We have recently reopened our negotiations with the Hartford Steam Boiler Inspection and Insurance company and have inquired as to whether or not they would be willing to make an initial inspection under the conditions outlined above. Their reply should be in our hands within a short time.

"We would like to state that a new boiler manual went into effect on July 1st of this year, superseding all former schedules issued. We are not so far in possession of this new schedule, but understand that rates have had to be raised generally. We are under impression that every new boiler has to be constructed under the supervision of a licensed inspector, and believe that the provisions of the A. S. M. E. code are made to govern the construction. Furthermore, boilers may be held unsafe and uninsurable at a high pressure and still remain safe and insurable at a lower pressure.

"As soon as we are in possession of further communications from the Hartford Steam Boiler Inspection and Insurance Co., we will supply you with copies thereof."

Your committee recommends that the trustees of this association give due consideration to this important matter with a view to establishing a system of boiler inspection and insurance especially applicable to the steam boilers of sugar factories in operation in this territory.

Second Sugars

On the subject of crystallizers and centrifugals and apparatus dealing with low grade sugars the committee reports as follows:

"For several years past a great deal of attention has been given to the problems connected with the manipulation of second sugars and after-products, as it is realized that the bulk of factory losses now occur in the final molasses.

"During the period 1898-1902 when most of the very large factories now in operation in this territory were designed and constructed, crystallizers for handling low-grade molasses were included in the equipments, but a number of factories which were in operation at that time were not so equipped, and it has been a matter of speculation amongst those interested as to why it was that crystallizers for handling second molasses were not generally adopted at that time, since it must be conceded that for cleanliness, mechanical efficiency and speed of work, crystallizers and adjuncts are quite superior to the older methods of manipulating second and low-grade sugars in open coolers and storage tanks or cisterns.

"The probable answer to this question is that to alter and rearrange a factory of the older type to use crystallizers is a very expensive piece of work, involving a large amount of reconstruction, as well as the installation of new and costly equipment, and machinery, and when this expense was considered in connection with the anticipated gain in returns of sugar, the balance in favor of change of system was not attractive enough to warrant the investment.

"Recent developments in the manipulation of low-grade molasses may cause a change of opinion in this direction.

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Repairs

Commenting on repairs of sugar house machinery, the committee states:

"Heretofore it has not been the custom for this committee to comment on factory repairs, but since it is common knowledge that these repairs constitute a large and increasingly important item in the factory cost of 'Manufacture of Sugar,' it seems to be an appropriate subject for discussion.

"The entire factory from the building to the smallest piece of machinery is subject to wear and tear, and therefore to replacements, but that portion of the factory equipment which does the hardest work, and in which the most serious and expensive breakdowns occur, is the milling or crushing department. The most powerful engines, the most complicated gearing and the heaviest and most expensive machinery is situated in this department, and therefore the greatest amount of repairs and renewals occur here, and to a much greater extent than in previous years because of the recent improvements in methods of milling, and the advances in milling efficiency which have been made.

"Repairs are constantly required in all other departments of a factory, but the cost of these repairs remains practically stationary from year to year, consisting mainly of cleaning, renewal of tubes, pipes, repairs to brickwork, etc., so that for this report it is proposed to confine discussion to the repairs in the milling department, because it is in this that a great increase in expense has taken place in late years.

"The introduction of the Messchaert drainage groove in 1914 marks the beginning of a notable increase in the extraction of juice obtained by cane crushing mills used in this country. One of the reasons why the Messchaert groove when applied to a cane-crushing mill, produces an increase in the extraction of juice from the cane is because it (the groove) so increases the grip on the mat of cane or bagasse, or what amounts to the same thing, so prevents slipping, that the rollers can be set much closer together than when these grooves are not used. This being the case it is obvious that where the grooves are in use the mill is very liable to be overloaded, and the frequent breakages of mill rollers, mill cheeks and gearing seem to point to the fact that mills are at times overloaded to a considerable extent; with close setting of the mills any piece of metal entering the rollers with the cane causes a much greater strain on the machinery than when the rollers are set further apart, and closer setting of the rollers demands greater power in the driving engine, which in turn produces a greater strain on the gearing, and as a consequence a greater liability to breakdown of a serious nature.

"As a consequence of experience gained during the last few years it has been found necessary to alter and greatly strengthen the design of mill checks, intermediate gearing and the size of roller shafts and power of driving engine, while different qualities of material in cast iron and steel for the rollers themselves have been successfully experimented with.

"It is hardly necessary to point out that excessive repairs in the milling equipment such as have been the recent experience of some factories, are due to the endeavor to obtain increased yield of juice from the cane with weak and inadequate equipment of old design; the expense attending current and permanent repairs in such cases added to the loss of time and delays in harvesting the crop, sometimes more than offset the gain made during the season by the increased quantity of juice extracted, and there are cases in which it is an open question whether or not it be better financial policy to scrap an entire milling plant rather than attempt to add on or build up an old design by stronger parts or replacements.

"It is of the first importance that steady and continuous operation of the machinery in the milling department of a sugar factory be assured, and this can only be done by substantial repairs carefully carried out.

"This committee in thus drawing attention to the matter of factory repairs does so for the purpose of inviting discussion, and hopes that valuable hints and information may result therefrom."

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